REMARKS

The last Office Action has been carefully considered.

It is noted that the drawings are objected to, the specification is objected to and the claims are objected to as well for formal reasons.

Claims 1-6 are rejected under 35 U.S.C. 102(b) over the European patent document 655,373.

At the same time the Examiner indicated that claims 7 and 8 are not rejected over the art.

In connection with the Examiner's objection to the drawings, applicants have amended the specification to define the legs in Figure 7 as 72', 74', and submitted a copy of Figure 7 with the corresponding correction.

In connection with the Examiner's objection to the specification, the specification has been amended as required by the Examiner in the second paragraph on page 2 of the Office Action. Also, the substitute specification has been submitted. It is respectfully submitted that the

substitute specification does not contain new matter.

Finally, the claims were amended in formal aspects as required by the Examiner. It is submitted that some changes proposed by the Examiner to claims 3 and 4 were not completely clear since they could not be found in the corresponding lines. The Examiner is respectfully requested and authorized to make the changes to the claims by his Amendment if necessary.

The Examiner's indication of the allowability of claims 7 and 8 has been gratefully acknowledged. In connection with this, claim 7 has been cancelled and claim 9 has been submitted which combines the features of the original claims 1, 6 and 7. It is believed that claim 9 should be considered as being in allowable condition.

Claim 8 has been amended to depend on claim 9, and therefore it should be in allowable condition as well.

At the same time the claims have been retained substantially as they were with the exception of the formal changes suggested by the Examiner.

The Examiner rejected the claims over the European patent document 655,373. In this document an elongated bearing element 10 is proposed, which has two parallel side walls 12. Each side wall 12 has an outer surface 14 and an inner surface 16, as explained in column 3, lines 15-20. It can be clearly seen that the hub 33 connects both side walls 12 at their inner surfaces 16, however it does not connect the side wall 14 with a side wall 16 as indicated by the Examiner.

The bearing element 10 is laterally guided with its inner surfaces 16 on the hook-shaped end of the wiper rod 38 and takes up forces in the longitudinal direction of the hub 36. The distance of the inner surfaces 16 from one another is substantially the same at both sides of the hub 36, so that the bearing element 10 is suitable only for wiper rods of a predetermined width. For wiper rods of another width, another bearing element must be utilized.

The side walls 12 at their wiper arm-side ends are provided in extension of the inner surfaces 16 with rear elements 24 which extend outwardly relative to the inner surfaces 16 and form steps. The distance A2 between the elements 24 is greater than the distance A1 between the inner surfaces 16. However, the elements 24 do not determine a clearance at this

side of the hub 32, but instead the inner surfaces 16. The clearance is technically the smallest distance inside the operational region, which is provided by the surfaces for the lateral guidance of the bearing element relative to the hook-shaped end of the wiper rod.

Therefore the following facts can be clearly stated:

- the distance A2 between the elements 24 does not determine the clearance between the lateral guiding surfaces of the bearing element at the associated side of the hub, but instead the distance A1 between the inner surfaces 16 which is smaller than A2;
- the elements 24 serve neither for lateral guidance with smaller wiper rods, nor allow the mounting of wider wiper rods.

The Examiner indicated that the new features of the present invention basically are related to the use of the bearing element and not its design. Applicant have to respectfully disagree with this position. It is not justified to say that for a person of ordinary skill in the art it would be obvious that the bearing element at both sides of the hub is designed for the use of differently wide wiper rods , and so that the clearance between the guiding surfaces of the hook-shaped ends at one side of the hub corresponds to one wiper rod to be used, while the clearance between the guiding surfaces

between the hook-shaped end and the other side of the hub corresponds to the width of another wiper rod to be used. Basically, at the end with greater clearance smaller wiper rods can be mounted, however the bearing element has no lateral guidance, so that the inner surfaces in the region of the hook-shaped ends loose their functions for lateral guidance. At the end with the smaller clearance, no wide wiper rods can be mounted. The design of the bearing element with respect to wiper rods is clearly defined in claim 1 with corresponding structural features.

The bearing element as defined in claim 1 is designed so that, as seen in the longitudinal direction, at both sides of the hub between the side walls a corresponding region for lateral guidance of the bearing element by a hook-shaped end of a wiper arm is provided, wherein the regions are different with respect to clearances between the side walls in that, the greater clearance corresponds to the width of a wider wiper rod, and the smaller clearance corresponds to the clearance of a smaller wiper rod.

It is therefore respectfully submitted that claim 1 defines the bearing element of the present invention, which clearly and patentably distinguishes from the prior art.

In order to arrive at the applicant's invention from the reference, the reference has to be fundamentally modified. It is known however that in order to arrive at a claimed invention, by modifying the references the cited art must itself contain a suggestion for such a modification.

This principle has been consistently upheld by the U.S. Court of Customs and Patent Appeals which, for example, held in its decision in re Randol and Redford (165 USPQ 586) that

> Prior patents are references only for what they clearly disclose or suggestion; it is not a proper use of a patent as a reference to modify its structure to one which prior art references do not suggest.

Definitely, the reference does not contain any hint or suggestion for such modifications.

Also, it should be noted that the Examiner rejected the claims as anticipated by the European patent. In connection with this, it is believed to be advisable to cite the decision Lindeman Machinen Fabrik GmbH v. American Hoist & Dairy Co., 221 USPQ 481, 485 (Fed. Cir. 1984) in which it is stated:

> "Anticipation requires in the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claims".

Definitely, the single prior art reference applied by the Examiner does not provide a disclosure for each and every element of the claimed invention arranged in the same way.

In the decision Row v. Dror, 42 USPQ 2d 155, 153 (Fed. Cir. 1997) it is stated:

> "A prior art reference anticipates a claim only if the reference discloses, either expressed or inherently every limitation of the claim...absence from the reference of any claimed element negates anticipation".

It is believed that this decision is also applicable to the situation in the present application.

Finally, it is well known that if the invention provides for the highly advantageous results which can not be accomplished by the reference, this is an additional proof of patentability of the invention. It is well known that in order to support a valid rejection the art must also suggest that it would accomplish applicant's results. This was stated by the Patent Office Board of Appeals, in the case Ex parte Tanaka, Marushima and Takahashi (174 USPQ 38), as follows:

> Claims are not rejected on the ground that it would be obvious to one of ordinary skill in the art to rewire prior art devices in order to accomplish applicants' result, since there is no

suggestion in prior art that such a result could be accomplished by so modifying prior art devices.

In view of the above presented remarks and amendments, it is believe that claim 1, together with other rejected claims, should also be considered as patentably distinguishing over the art and should also be allowed.

Reconsideration and allowance of the present application is most respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place this case in condition for final allowance, then it is respectfully requested that such amendments or corrections be carried out by Examiner's Amendment, and the case be passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, he is invited to telephone the undersigned (at 631-549-4700).

Respectfully submitted,

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SUBSTITUTE SPECIFICATION

~~Prior Art~~Background of the Invention

The invention is based on a bearing element for hinging a wiper blade ~~according to the preamble claim~~.

known windshield wipers have a wiper arm that Is comprised of a fastening part and an articulating part hinged to it that has a wiper rod. Furthermore, the have wiper blade that is comprised of a support bracket system with a primary center bracket and articulatingly connected, subordinate intermediary brackets as well as claw brackets and a wiper strip. The wiper blade is linked to the wiper arm by virtue of the fact that a hook-shaped end of the wiper rod holds a bearing element that is disposed between two side-pieces of the center bracket and, with a hub that is open over a circumference region, constitutes a hinge bolt of the center bracket . The articulation thus formed guides the wiper blade during the pivoting motion over the windshield, wherein the articulation and the support bracket system make it possible for the wiper strip to be able to adapt to a convexity of the windshield.

While the wiper arm is as a rule embodied in a vehicle specific

manner and experiences practically no wear during the service life, the wiper blae wears particularly at the articulations and on the wiper strip so that it must be replaced frequently during the service life of the vehicle. In this connection, as a rule not only is the wiper strip replaced but also the entire wiper blade, which is commercially available.

In order to keep the number of wiper blade types low, plastic bearing elements are packaged along with the wiper blades and have a number of receiving devices for the wiper rod thus permitting the same wiper to be used with wiper rods of different material thicknesses and widths as well as different material thicknesses and widths as well as different bending radii and detent elements. From the available bearing elements, the user selects the one suited for his vehicle and discards the rest. The excess bearing elements increase the wiper blade packaging and lead to an increase in waste. Furthermore the transport and storage volume is increased.

EP 0 234 525 B1 has disclosed a bearing element of this generic type, which has a lateral strut that is offset from the open hub in the longitudinal direction and, when the bearing element is mounted on the hook-shaped end of the wiper rode, serves as a fixing in the longitudinal direction.

To that end, the lateral strut has a distance from the rotational axis of the hub, which corresponds to the external bending radius of the hook-shaped end of the wiper rode. The wiper rode therefore does not require any detent opening for the longitudinal securing of the bearing element. The bearing element is consequently suited for wiper rods with and without a detent opening.

Furthermore, EP 0 655 373 A1 has disclosed a similar bearing element, which has two lateral struts disposed offset from the hub in the longitudinal direction, which serve as a longitudinal securing device for a hook-shaped end of a wiper rod, and the lateral strut that is disposed closest to the rotational axis is used for a hook-shaped end with a smaller bending radius and the other lateral strut is used for a hook-shaped end with a larger bending radius. The hook-shaped end with a larger bending radius rests with its curved inner surface against a correspondingly shaped contact face of the first lateral strut. Consequently this bearing element is suited for wiper rods whose hook-shaped ends have two different bending radii. In order to keep the wiper rode from rotating in relation to the wiper rod it has an additional lateral strut and a detent projection disposed offset toward the hub. When mounting, the wiper rod is locked in detent fashion between the lateral strut and the detent projection.

~~Advantages~~Summary of the invention

According to the invention, the bearing element has two side walls that are connected by way of an open hub and a number of lateral struts. The side walls extend in the longitudinal direction of the bearing element on both sides of the hub wherein the clearances of the side walls are different sizes on the opposite ends. The bearing element can consequently be used for wiper rods of a different widths by virtue of the fact that on the one hand, a wide wiper rod is guided laterally between the end regions of the side walls that have a large clearance and on the other hand a narrower wiper rod is guided between the end regions on the opposite end of the bearing element.

Advantageously, the bearing element has the same external width at both ends so that it is favorably guided between the side-pieces of the center bracket. This is achieved by means of beads that define the smaller clearance of the side walls at one end.

According to one embodiment of the invention, an outer contour of the hub has a contact face for the hook-shaped end of the wiper rod with a small bending radius and a smaller material thickness. In the

clearance that corresponds to the material thickness, a first lateral strut is disposed offset from the hub in the longitudinal direction and when mounted, rests against the outer bending radius of the hook-shaped end and consequently fixes the bearing element to the wiper arm the longitudinal direction. As a result, an otherwise customary detent projection which engages in a detent opening of the hook-shaped end of the wiper rod, is no longer necessary .consequently, the bearing element is suited for wiper rods with different detent openings or those that do not have any detent opening.

For wiper rods with a hook-shaped end that has a larger bending radius, the first lateral strut has a contact face on its outer contour remote from the hub. At a distance from this contact face corresponding to the larger material thickness of the wiper rod, a second lateral strut is disposed, which represents a stop fro the wiper rod in the longitudinal direction when mounted.

The second lateral strut has a flattened contact face toward the hub for a narrower wiper rod with a hook-shaped end that has a smaller bending radius and a smaller material thickness. In this instance, the first lateral strut is used to fix the wiper rod in the longitudinal direction when mounted. In this connection, the flattening selected so that is the central,

flattened region of the contact face, the distance to the first lateral strut corresponds to the larger material thickness of the wiper rod with a larger bending radius.

In order to limit the pivoting motion of the wiper rod in the relation to the bearing element, additional lateral struts are provided against which there wipe rod rests when mounted suitably, a detent projection is provided on the side walls, at least on one end which connection with the additional lateral struts, secure the wiper rod in the mounted position. The legs of the wiper rod on its hook-shaped end are disposed virtually parallel to the longitudinal direction, wherein the wiper rod is fixed between the additional lateral struts and the respective detent projections. So that wiper rods with a different material thickness can be fixed in a play-free manner, it is advantageous to dispose the detent projection as offset in relation to the other struts, toward the hub in the longitudinal direction. As a result the, wiper rod with the smaller material thickness is given a greater inclination in relation to the longitudinal direction so that it fills the intermediary space projection in the longitudinal direction between additional lateral strut and the detent hub in a play-free manner.

Brief Description of the Drawings

Additional advantages ensue from the following description of the drawings. An exemplary embodiment of the invention is depicted in the drawings, the drawings, the description, and the claims contain numerous features in combination. One skilled in the art will also suitably consider the features individually and will combine them into meaningful additional combinations.

Fig. 1 is a top view of a windshield wiper,

Fig. 2 is a longitudinal section through a bearing element according to the invention,

Fig. 3 is a top view of the bearing element according to Fig. 2,

Fig. 4 is a longitudinal section corresponding to Fig. 2 with a half-mounted bearing element on a wiper rod with a larger width and a smaller material thickness;

Fig. 5 is a longitudinal section corresponding to Fig. 4, with a bearing element in the mounted position,

Fig. 6 is a section corresponding to Fig. 5, but with a wiper rod that has a larger material thickness and a larger bending radius of its hook-shaped end, and

Fig. 7 is a section corresponding to Fig. 5, with a bearing element that is rotated by 180° and is for a narrower wiper rod.

Description of the ~~Exemplary~~Preferred Embodiments

The windshield wiper shown in Fig. 1 has a wiper arm 12 with a fastening part 14 and an articulating part 16 to which a wiper rod 18 is attached. The articulating part 16 and the wiper rod 18 can also be embodied as being of one piece. With its hook-shaped end 20 (Fig. 5), the wiper rod 18 holds a bearing element 30, which is disposed between side-pieces of a center bracket 22 and includes a supporting bolt 28 of the center bracket 22 with an open hub 36. The center bracket 22 is part of a wiper blade 10 whose wiper strip 26 is articulatingly connected to the center bracket 22 by way of claw brackets 24.

The bearing element 30 has two side walls 32, 34 extending in the longitudinal direction 38, which are connected to each other by way of the hub 36, a first lateral strut 60, a second lateral strut 64, and additional lateral struts 70. The side walls 32, 34 have different sized clearances 40, 42 on their ends, wherein the smaller clearance 4 is formed by beads 44 so that externally, the width of the bearing element 30 is the same at both ends despite the different clearances 40, 42 and as a result, the bearing element 30 is reliably guided in the center bracket 22. The different clearances 40, 42 are provided for wiper rods 18 with a corresponding width, which are

guided with the hook-shaped end 20 between the side walls 32 and 34. Consequently, the bearing element 30 can be used for wiper rods 18 with two different widths.

The lateral struts 60, 64, 70 are arranged in the longitudinal direction 38 at both sides of the hub 36.

The hook-shaped end 20 with a smaller material thickness 52 and a smaller bending radius (Fig. 5) is slid lateral to the longitudinal direction 38 through the bearing element 30 and is pulled over the hub 36 until the inner contour rests against the hub 36. Then it is pivoted by approx. 90° until it rests with its longer leg 72 against the addition strut 70 and engages in detent fashion between it and a detent projection 76 (Fig. 5). In the mounted position (Fig. 5), the legs 72, 74 of the wiper rod 18 are disposed nearly parallel to the longitudinal direction 38, but with a slight inclination so that the inner and outer sides of the longer leg 72 rest in a play-free manner against the detent projection 76 or against the additional lateral strut 70. This is achieved in particular by virtue of the fact that in relation to the additional lateral strut 70, the detent projection 76 is disposed offset toward the hub 36 in the longitudinal direction 38.

In the longitudinal direction 38, the hook-shaped end 20 is held by the first lateral strut 60, which is disposed at a distance 56 from the hub 36 that corresponds to the smaller material thickness 52. On the side remote from the hub 36, the first lateral strut 60 has a contact fact 62 for a wiper rod 18 with a hook-shaped end 20, which has a larger bending radius 50 and a larger material thickness 54 (Fig. 6). The hook-shaped end 20 according to Fig. 6 is mounted in a manner similar to the one according to Fig. 5, but it is pulled over the hub 36 and the first lateral strut 60 and is then pivoted by 90° around a virtual axis that is disposed between the contact face 62 and the hub 36 until the longer leg 72 engages in detent fashion between the additional lateral strut 70 and the detent projection 76. Corresponding recesses 82 are provided on the hub 6 so that the hook-shaped end 20 can be pulled over the hub 36 and the first lateral strut 60, and can then be rotated.

The elements 70, 76, 78 are actually detent means which hold the bearing element 30 by the hook-shaped end 20.

For securing in the longitudinal direction 38, a second lateral strut 64 is provided at the distance 58 from the first lateral strut 60. Toward the first lateral strut 60, this second lateral strut has a contact face 66, which

has a flattening 68 in its central region. The contact face 66 is used to receive a hook-shaped end 20 of a narrower wiper rod 18 with a smaller bending radius and a smaller material thickness 52 (Fig. 7). The flattening 68 achieves the fact that the contact face 62 of the first lateral strut 60 can provide for the axial securing of the hook-shaped end 20 with the smaller material thickness 52 according to Fig. 7, and a spacing 58 is nevertheless achieved for a hook-shaped end 20 with a larger material thickness 54 according to Fig. 6.

In Fig. 7 the longer and shorter legs are identified as 72' and 74'.

In order to mount the bearing element 30 on the supporting bolt 28, recesses 80 are provided in the side walls 32, 34 and are connected to the open side of the hub 36. Through the elasticity of the material, the bearing element 30 can be clipped onto the supporting bolt 28 and consequently can be packaged and supplied in a pre-assembled state with the wiper blade 10.

The bearing element 30 according to the invention can be used for wiper rods 18 with two different widths, material thickness 52, 54, and

bending radii 48, 50. As a result, the requirements for the three most common wiper rods 18, namely with a cross sectional profile of 8 x 3 mm, 9 x 3 mm, and 9 x 4 mm, can be fulfilled by one bearing element 30. It replaces and reduces the bewildering array of bearing element that are normally packaged along the wiper blade 10. Furthermore, it can be pre-assembled in a user-friendly manner and additionally reduces the packaging size.